

R. Shukla

1632

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/321,987A

DATE: 07/21/2000
TIME: 07:58:44

Input Set : A:\Sequence
Output Set: N:\CRF3\07212000\I321987A.raw

ENTERED

TC 1000 MAIL ROOM

AUG - 7 2000

RECEIVED

3 <110> APPLICANT: Kimble, Judith E
4 Blelloch, Robert H
6 <120> TITLE OF INVENTION: Agent and Method for Modulating Cell Migration
8 <130> FILE REFERENCE: 960296.95386
10 <140> CURRENT APPLICATION NUMBER: 09/321987A
11 <141> CURRENT FILING DATE: 1999-05-28
13 <150> PRIOR APPLICATION NUMBER: 60/087170
14 <151> PRIOR FILING DATE: 1998-05-29
16 <160> NUMBER OF SEQ ID NOS: 2
18 <170> SOFTWARE: PatentIn Ver. 2.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 6659
22 <212> TYPE: DNA
23 <213> ORGANISM: Caenorhabditis elegans
25 <220> FEATURE:
26 <221> NAME/KEY: CDS
27 <222> LOCATION: (1)..(6450)
29 <400> SEQUENCE: 1
30 atg cgc tcc atc ggc ggc tca ttc cat ctg ctg cag ccc gtc gtc gcc 48
31 Met Arg Ser Ile Gly Gly Ser Phe His Leu Leu Gln Pro Val Val Ala
32 1 5 10 15
34 gct ctc ata ctc ctc gtc gtc tgc ctc gtt tat gcg ttg caa tca ggg 96
35 Ala Leu Ile Leu Leu Val Val Cys Leu Val Tyr Ala Leu Gln Ser Gly
36 20 25 30
38 agt ggc acg atc tca gaa ttc tca tca gat gtg ctg ttc tcc agg gcc 144
39 Ser Gly Thr Ile Ser Glu Phe Ser Ser Asp Val Leu Phe Ser Arg Ala
40 35 40 45
42 aag tac tca ggt gtg cca gtg cat cac agt cga tgg cgt caa gac gcc 192
43 Lys Tyr Ser Gly Val Pro Val His His Ser Arg Trp Arg Gln Asp Ala
44 50 55 60
46 ggt ata cac gtc atc gac agc cat cac atc gtc cga aga gat tct tat 240
47 Gly Ile His Val Ile Asp Ser His His Ile Val Arg Arg Asp Ser Tyr
48 65 70 75 80
50 gga cgt cgt gga aaa cgt gat gtc acg tca aca gat cgg cga cgt cga 288
51 Gly Arg Arg Gly Lys Arg Asp Val Thr Ser Thr Asp Arg Arg Arg Arg
52 85 90 95
54 ctc caa gga gtt gcc aga gac tgt gga cat gct tgt cac tta cga tta 336
55 Leu Gln Gly Val Ala Arg Asp Cys Gly His Ala Cys His Leu Arg Leu
56 100 105 110
58 cga tca gat gat gcc gtc tac atc gtt cat ttg cac aga tgg aat caa 384
59 Arg Ser Asp Asp Ala Val Tyr Ile Val His Leu His Arg Trp Asn Gln
60 115 120 125
62 ata ccg gac tca cat aac aaa agt gtt ccc cac ttt tcc aat tca aat 432
63 Ile Pro Asp Ser His Asn Lys Ser Val Pro His Phe Ser Asn Ser Asn
64 130 135 140
66 ttc gcg ccg atg gtc tta tat ttg gac tcg gag gag ggt aga ggt 480
67 Phe Ala Pro Met Val Leu Tyr Leu Asp Ser Glu Glu Glu Val Arg Gly

RAW SEQUENCE LISTING DATE: 07/21/2000
 PATENT APPLICATION: US/09/321,987A TIME: 07:58:44

Input Set : A:\Sequence
 Output Set: N:\CRF3\07212000\I321987A.raw

68	145	150	155	160	
70	gga atg tct cga aca gat ccc gat tgt atc tac cgt gca cac gtt aaa	528			
71	Gly Met Ser Arg Thr Asp Pro Asp Cys Ile Tyr Arg Ala His Val Lys				
72	165 170 175				
74	ggt gta cat cag cac agc atc gtc aat tta tgc gac tcg gaa gac gga	576			
75	Gly Val His Gln His Ser Ile Val Asn Leu Cys Asp Ser Glu Asp Gly				
76	180 185 190				
78	ttg tac gga atg ctt gca cta ccc agc gga atc cat acg gtt gag cca	624			
79	Leu Tyr Gly Met Leu Ala Leu Pro Ser Gly Ile His Thr Val Glu Pro				
80	195 200 205				
82	att att agt gga aac gga aca gag cac gga gca agt cgc cat agg	672			
83	Ile Ile Ser Gly Asn Gly Thr Glu His Asp Gly Ala Ser Arg His Arg				
84	210 215 220				
86	caa cat ctc gtc cga aag ttc gat cca atg cac ttc aaa tcg ttt gac	720			
87	Gln His Leu Val Arg Lys Phe Asp Pro Met His Phe Lys Ser Phe Asp				
88	225 230 235 240				
90	cat ctt aac tcg acc agt gtc aac gag acg gag acg acg gtt gcc acg	768			
91	His Leu Asn Ser Thr Ser Val Asn Glu Thr Glu Thr Thr Val Ala Thr				
92	245 250 255				
94	tggt caa gat cag tgg gaa gat gtt att gaa cgc aaa gca aga tcc cga	816			
95	Trp Gln Asp Gln Trp Glu Asp Val Ile Glu Arg Lys Ala Arg Ser Arg				
96	260 265 270				
98	aga gct gcc aac tct tgg gat cac tat gtt gaa gtc ctt gtg gtg gcg	864			
99	Arg Ala Ala Asn Ser Trp Asp His Tyr Val Glu Val Leu Val Val Ala				
100	275 280 285				
102	gat aca aaa atg tac gaa tat cac gga aga tct ctt gaa gac tac gtt	912			
103	Asp Thr Lys Met Tyr Glu Tyr His Gly Arg Ser Leu Glu Asp Tyr Val				
104	290 295 300				
106	ctc act ctc ttc tcc aca gtt gcc tcc atc tat cgt cac caa tcc ctt	960			
107	Leu Thr Leu Phe Ser Thr Val Ala Ser Ile Tyr Arg His Gln Ser Leu				
108	305 310 315 320				
110	cgt gca tct atc aat gtc gtt gtt gtc aag ttg atc gtt ttg aaa acg	1008			
111	Arg Ala Ser Ile Asn Val Val Val Val Lys Leu Ile Val Leu Lys Thr				
112	325 330 335				
114	gaa aac gct gga cca cga atc act cag aac gct caa caa aca ctt caa	1056			
115	Glu Asn Ala Gly Pro Arg Ile Thr Gln Asn Ala Gln Gln Thr Leu Gln				
116	340 345 350				
118	gat ttc tgt aga tgg cag cag tat tac aat gat cca gat gat tcg agt	1104			
119	Asp Phe Cys Arg Trp Gln Gln Tyr Tyr Asn Asp Pro Asp Asp Ser Ser				
120	355 360 365				
122	gtc caa cat cat gac gtt gca atc ctt ttg acg cgt aaa gat att tgt	1152			
123	Val Gln His His Asp Val Ala Ile Leu Leu Thr Arg Lys Asp Ile Cys				
124	370 375 380				
126	cga tca caa gga aaa tgc gat aca ctt gga ctt gct gaa ctt gga aca	1200			
127	Arg Ser Gln Gly Lys Cys Asp Thr Leu Gly Leu Ala Glu Leu Gly Thr				
128	385 390 395 400				
130	atg tgt gat atg caa aaa agt tgt gca atc ata gaa gac aat gga ttg	1248			
131	Met Cys Asp Met Gln Lys Ser Cys Ala Ile Ile Glu Asp Asn Gly Leu				
132	405 410 415				

RAW SEQUENCE LISTING

DATE: 07/21/2000

PATENT APPLICATION: US/09/321,987A

TIME: 07:58:45

Input Set : A:\Sequence

Output Set: N:\CRF3\07212000\I321987A.raw

```

134 agt gct gca ttc aca att gct cat gaa ttg ggt cat gtg ttt tcg att 1296
135 Ser Ala Ala Phe Thr Ile Ala His Glu Leu Gly His Val Phe Ser Ile
136 420 425 430
138 cct cat gat gac gaa cga aaa tgc tct acc tac atg ccg gtt aat aag 1344
139 Pro His Asp Asp Glu Arg Lys Cys Ser Thr Tyr Met Pro Val Asn Lys
140 435 440 445
142 aac aac ttc cac ata atg gca cca acg ttg gaa tat aac act cat cca 1392
143 Asn Asn Phe His Ile Met Ala Pro Thr Leu Glu Tyr Asn Thr His Pro
144 450 455 460
146 tgg agt tgg tcg cca tgt tca gct gga atg ctc gaa cga ttc ctc gaa 1440
147 Trp Ser Trp Ser Pro Cys Ser Ala Gly Met Leu Glu Arg Phe Leu Glu
148 465 470 475 480
150 aat aat cga ggt caa act caa tgt cta ttc gat cag ccg gtc gaa cgt 1488
151 Asn Asn Arg Gly His Thr Gln Cys Leu Phe Asp Gln Pro Val Glu Arg
152 485 490 495
154 cgt tac tac gag gat gtc ttt gta cgt gat gaa cca gga aag aaa tac 1536
155 Arg Tyr Tyr Glu Asp Val Phe Val Arg Asp Glu Pro Gly Lys Lys Tyr
156 500 505 510
158 gat gct cat caa cag tgc aag ttt gta ttt gga cca gct tct gag ttg 1584
159 Asp Ala His Gln Gln Cys Lys Phe Val Phe Gly Pro Ala Ser Glu Leu
160 515 520 525
162 tgc cct tat atg ccg aca tgc cgc cgt ctt tgg tgt gca aca ttc tac 1632
163 Cys Pro Tyr Met Pro Thr Cys Arg Arg Leu Trp Cys Ala Thr Phe Tyr
164 530 535 540
166 gga agc cag atg ggc tgt cga act cag cat atg cca tgg gcc gac gga 1680
167 Gly Ser Gln Met Gly Cys Arg Thr Gln His Met Pro Trp Ala Asp Gly
168 545 550 555 560
170 act cct tgt gac gaa tca aga agc atg ttc tgt cat cat gga gcc tgt 1728
171 Thr Pro Cys Asp Glu Ser Arg Ser Met Phe Cys His His Gly Ala Cys
172 565 570 575
174 gtt cgt cta gcc ccc gaa tcc ctt acc aaa att gac gga caa tgg ggt 1776
175 Val Arg Leu Ala Pro Glu Ser Leu Thr Lys Ile Asp Gly Gln Trp Gly
176 580 585 590
178 gac tgg cga tca tgg gga gaa tgc agt cgt act tgt ggt ggt ggt gtt 1824
179 Asp Trp Arg Ser Trp Gly Glu Cys Ser Arg Thr Cys Gly Gly Gly Val
180 595 600 605
182 caa aaa gga tta aga gat tgt gac agc cca aaa cct cga aat ggt gga 1872
183 Gln Lys Gly Leu Arg Asp Cys Asp Ser Pro Lys Pro Arg Asn Gly Gly
184 610 615 620
186 aag tac tgt gtt ggt caa cga gaa cgt tat cgg tca tgt aat aca caa 1920
187 Lys Tyr Cys Val Gly Gln Arg Glu Arg Tyr Arg Ser Cys Asn Thr Gln
188 625 630 635 640
190 gaa tgc cca tgg gat act caa cca tac cgt gaa gtt caa tgt tct gaa 1968
191 Glu Cys Pro Trp Asp Thr Gln Pro Tyr Arg Glu Val Gln Cys Ser Glu
192 645 650 655
194 ttc aac aat aaa gat att gga atc caa ggt gtc gct tca acg aat act 2016
195 Phe Asn Asn Lys Asp Ile Gly Ile Gln Gly Val Ala Ser Thr Asn Thr
196 660 665 670
198 cac tgg gtt cca aaa tat gcg aat gtt gca cca aat gaa cgt tgc aag 2064

```

RAW SEQUENCE LISTING

DATE: 07/21/2000

PATENT APPLICATION: US/09/321,987A

TIME: 07:58:45

Input Set : A:\Sequence

Output Set: N:\CRF3\07212000\I321987A.raw

```

199 His Trp Val Pro Lys Tyr Ala Asn Val Ala Pro Asn Glu Arg Cys Lys
200      675      680      685
202 ctg tat tgt cgg ctc agt gga tct gca gcg ttc tat ctg ctt cga gat 2112
203 Leu Tyr Cys Arg Leu Ser Gly Ser Ala Ala Phe Tyr Leu Leu Arg Asp
204      690      695      700
206 aaa gtt gtt gat gga aca cca tgt gat aga aat gga gac gat att tgt 2160
207 Lys Val Val Asp Gly Thr Pro Cys Asp Arg Asn Gly Asp Asp Ile Cys
208 705      710      715      720
210 gta gct gga gct tgt atg cca gca ggc tgt gat cat caa ctt cat tca 2208
211 Val Ala Gly Ala Cys Met Pro Ala Gly Cys Asp His Gln Leu His Ser
212      725      730      735
214 act ctc cga aga gac aaa tgt ggt gtt tgc ggt ggg gat gat tct tcc 2256
215 Thr Leu Arg Arg Asp Lys Cys Gly Val Cys Gly Gly Asp Asp Ser Ser
216      740      745      750
218 tgt aag gtt gtc aaa gga aca ttt aat gag caa gga acc ttt ggt tat 2304
219 Cys Lys Val Val Lys Gly Thr Phe Asn Glu Gln Gly Thr Phe Gly Tyr
220      755      760      765
222 aac gaa gta atg aag att cca gct ggt tct gca aat att gat atc cgg 2352
223 Asn Glu Val Met Lys Ile Pro Ala Gly Ser Ala Asn Ile Asp Ile Arg
224      770      775      780
226 cag aaa gga tat aat aat atg aaa gaa gat gac aat tat ctt tct ctc 2400
227 Gln Lys Gly Tyr Asn Asn Met Lys Glu Asp Asp Asn Tyr Leu Ser Leu
228 785      790      795      800
230 cgt gcc gcc aat ggt gaa ttc cta ctt aac ggt cat ttc caa gta tca 2448
231 Arg Ala Ala Asn Gly Glu Phe Leu Leu Asn Gly His Phe Gln Val Ser
232      805      810      815
234 ctg gct cgc caa caa att gca ttc caa gac act gtt ctc gaa tat tct 2496
235 Leu Ala Arg Gln Gln Ile Ala Phe Gln Asp Thr Val Leu Glu Tyr Ser
236      820      825      830
238 ggt tct gat gca att att gaa cgg ata aat gga act ggt ccg att aga 2544
239 Gly Ser Asp Ala Ile Ile Glu Arg Ile Asn Gly Thr Gly Pro Ile Arg
240      835      840      845
242 agt gac att tat gtt cat gtt ctt tct gtt ggt agt cat cca ccc gac 2592
243 Ser Asp Ile Tyr Val His Val Leu Ser Val Gly Ser His Pro Pro Asp
244      850      855      860
246 atc tca tat gag tac atg act gcg gct gtt cca aat gct gta att cgg 2640
247 Ile Ser Tyr Glu Tyr Met Thr Ala Ala Val Pro Asn Ala Val Ile Arg
248 865      870      875      880
250 cca ata tcc agt gca ttg tat ttg tgg aga gtt acg gat act tgg aca 2688
251 Pro Ile Ser Ser Ala Leu Tyr Leu Trp Arg Val Thr Asp Thr Trp Thr
252      885      890      895
254 gaa tgt gat aga gcc tgt cgt gga cag caa tcg caa aaa tta atg tgt 2736
255 Glu Cys Asp Arg Ala Cys Arg Gly Gln Gln Ser Gln Lys Leu Met Cys
256      900      905      910
258 ctg gac atg tcg act cat cgt caa agt cat gat aga aat tgt caa aat 2784
259 Leu Asp Met Ser Thr His Arg Gln Ser His Asp Arg Asn Cys Gln Asn
260      915      920      925
262 gtt ctc aaa cca aaa caa gca aca cga atg tgc aat ata gat tgt tct 2832
263 Val Leu Lys Pro Lys Gln Ala Thr Arg Met Cys Asn Ile Asp Cys Ser

```

RAW SEQUENCE LISTING

DATE: 07/21/2000

PATENT APPLICATION: US/09/321,987A

TIME: 07:58:45

Input Set : A:\Sequence

Output Set: N:\CRF3\07212000\I321987A.raw

```

264      930      935      940
266 aca aga tgg atc act gaa gat gtg tct agt tgt agt gcc aaa tgt gga 2880
267 Thr Arg Trp Ile Thr Glu Asp Val Ser Ser Cys Ser Ala Lys Cys Gly
268 945      950      955      960
270 tct gga cag aaa cgt caa cga gtt tct tgc gta aaa atg gag ggt gat 2928
271 Ser Gly Gln Lys Arg Gln Arg Val Ser Cys Val Lys Met Glu Gly Asp
272      965      970      975
274 cgt caa act cca gca tcc gaa cat cta tgt gat cgt aat tca aaa cca 2976
275 Arg Gln Thr Pro Ala Ser Glu His Leu Cys Asp Arg Asn Ser Lys Pro
276      980      985      990
278 tcc gat att gcc agt tgt tac att gac tgc tct gga aga aaa tgg aac 3024
279 Ser Asp Ile Ala Ser Cys Tyr Ile Asp Cys Ser Gly Arg Lys Trp Asn
280      995      1000      1005
282 tat gga gaa tgg act tca tgt tct gaa act tgc gga tcg aat gga aaa 3072
283 Tyr Gly Glu Trp Thr Ser Cys Ser Glu Thr Cys Gly Ser Asn Gly Lys
284      1010      1015      1020
286 atg cat cgg aag tca tat tgc gtt gat gat tcg aat cgt cga gtt gat 3120
287 Met His Arg Lys Ser Tyr Cys Val Asp Asp Ser Asn Arg Arg Val Asp
288      1025      1030      1035      1040
290 gag tca ttg tgc ggc aga gaa cag aaa gag gcg aca gaa cgg gaa tgt 3168
291 Glu Ser Leu Cys Gly Arg Glu Gln Lys Glu Ala Thr Glu Arg Glu Cys
292      1045      1050      1055
294 aac aga att cca tgt cca aga tgg gtt tat ggg cat tgg tca gag tgc 3216
295 Asn Arg Ile Pro Cys Pro Arg Trp Val Tyr Gly His Trp Ser Glu Cys
296      1060      1065      1070
298 tct cga agt tgt gat ggt gga gtc aaa atg cgt cat gct caa tgt ttg 3264
299 Ser Arg Ser Cys Asp Gly Gly Val Lys Met Arg His Ala Gln Cys Leu
300      1075      1080      1085
302 gat gca gcc gat cgg gaa aca cat aca tcc aga tgt ggt cca gca cag 3312
303 Asp Ala Ala Asp Arg Glu Thr His Thr Ser Arg Cys Gly Pro Ala Gln
304      1090      1095      1100
306 aca caa gaa cat tgt aat gaa cat gct tgt act tgg tgg cag ttc gga 3360
307 Thr Gln Glu His Cys Asn Glu His Ala Cys Thr Trp Trp Gln Phe Gly
308      1105      1110      1115      1120
310 gtc tgg tct gac tgc tca gct aag tgt gga gat ggt gta cag tat cga 3408
311 Val Trp Ser Asp Cys Ser Ala Lys Cys Gly Asp Gly Val Gln Tyr Arg
312      1125      1130      1135
314 gac gct aat tgt acc gat cgt cat aga tca gta cta ccg gaa cat cgt 3456
315 Asp Ala Asn Cys Thr Asp Arg His Arg Ser Val Leu Pro Glu His Arg
316      1140      1145      1150
318 tgc ctt aaa atg gaa aag ata att aca aaa cca tgt cat aga gaa tca 3504
319 Cys Leu Lys Met Glu Lys Ile Ile Thr Lys Pro Cys His Arg Glu Ser
320      1155      1160      1165
322 tgt cca aaa tat aaa ctt gga gaa tgg tct cag tgt agt gtt tct tgt 3552
323 Cys Pro Lys Tyr Lys Leu Gly Glu Trp Ser Gln Cys Ser Val Ser Cys
324      1170      1175      1180
326 gag gat gga tgg tcg tca aga aga gtt tca tgt gtt tct gga aat gga 3600
327 Glu Asp Gly Trp Ser Ser Arg Arg Val Ser Cys Val Ser Gly Asn Gly
328      1185      1190      1195      1200

```

VERIFICATION SUMMARY

DATE: 07/21/2000

PATENT APPLICATION: US/09/321,987A

TIME: 07:58:46

Input Set : A:\Sequence

Output Set: N:\CRF3\07212000\I321987A.raw